XFT Review

XFT
Upgrade

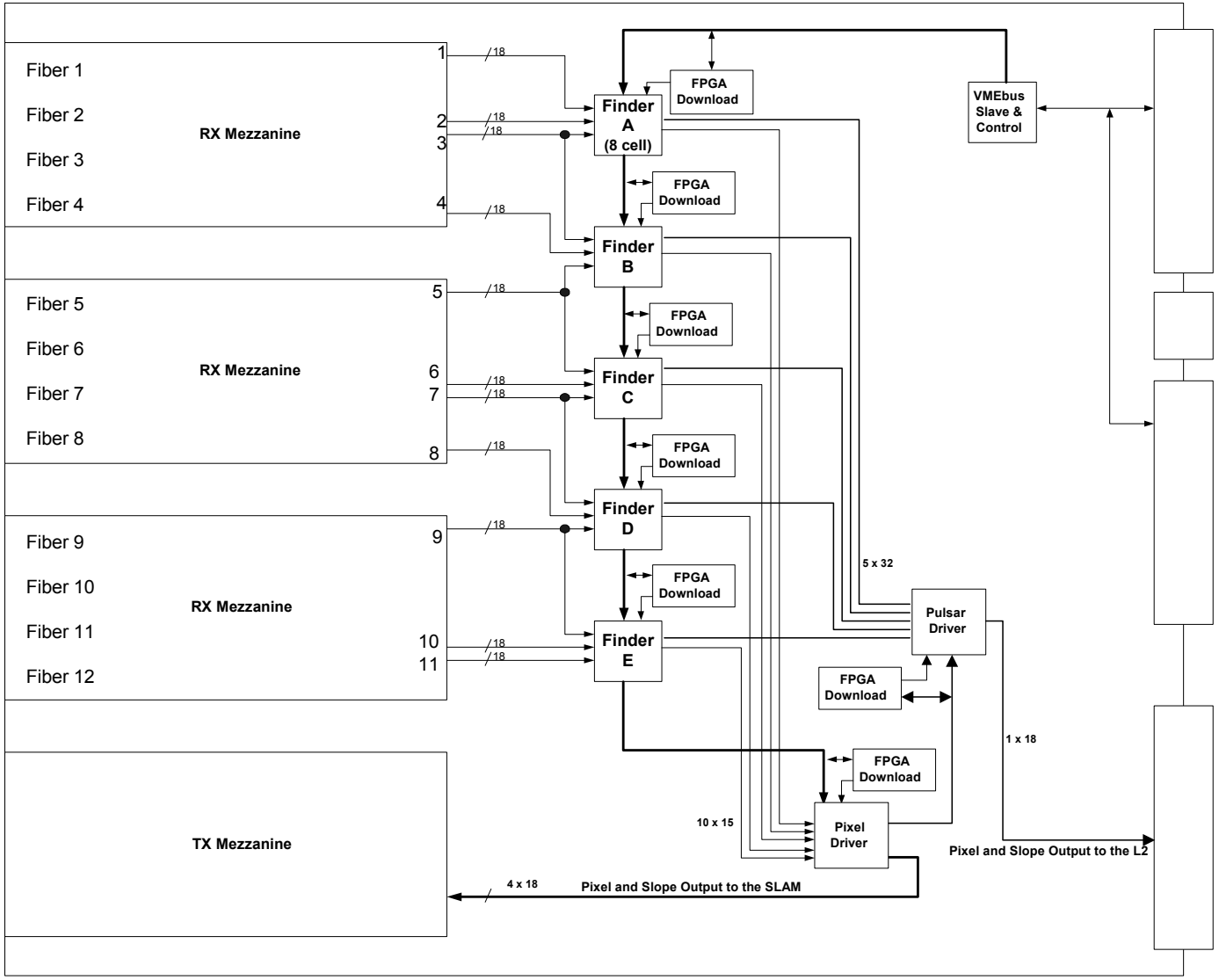
XFT Stereo Finder
Finder Hardware Status

(FNAL)

T. Shaw

XFT Stereo Block Diagram

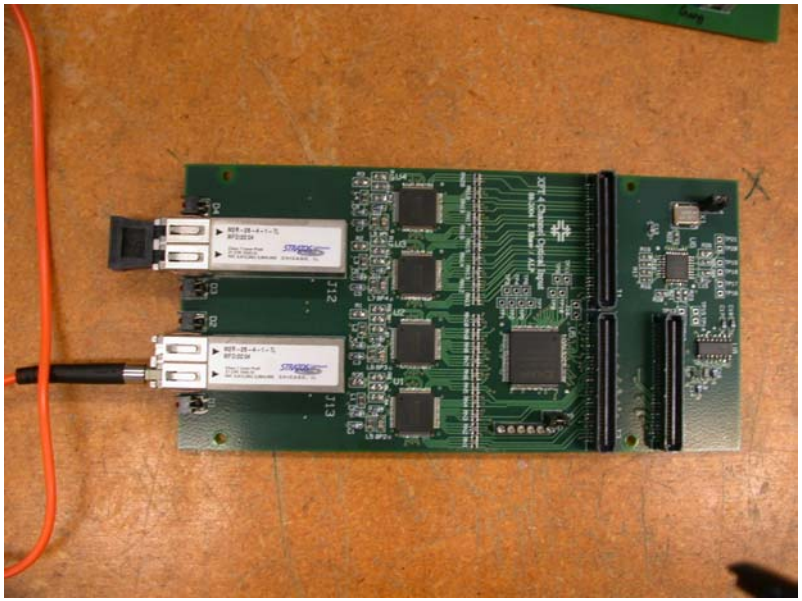
XFT Upgrade

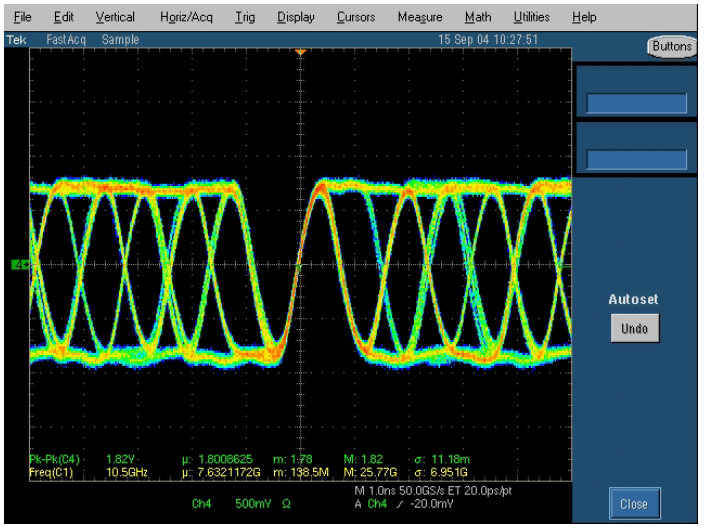


RX Mezzanine

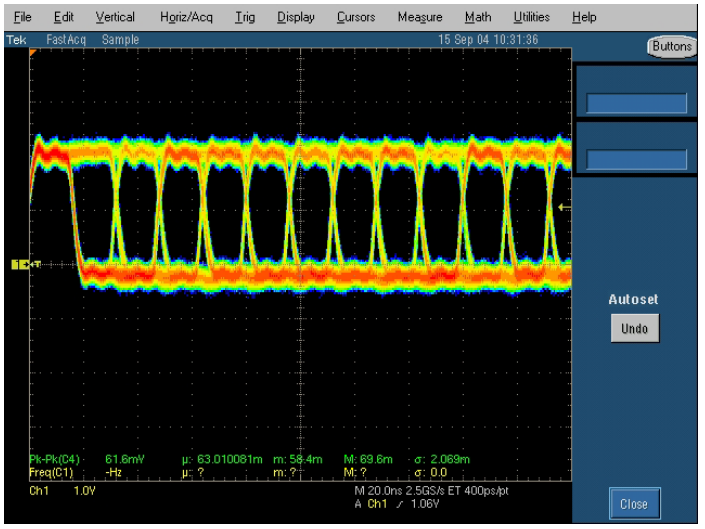
XFT Upgrade

Optical data

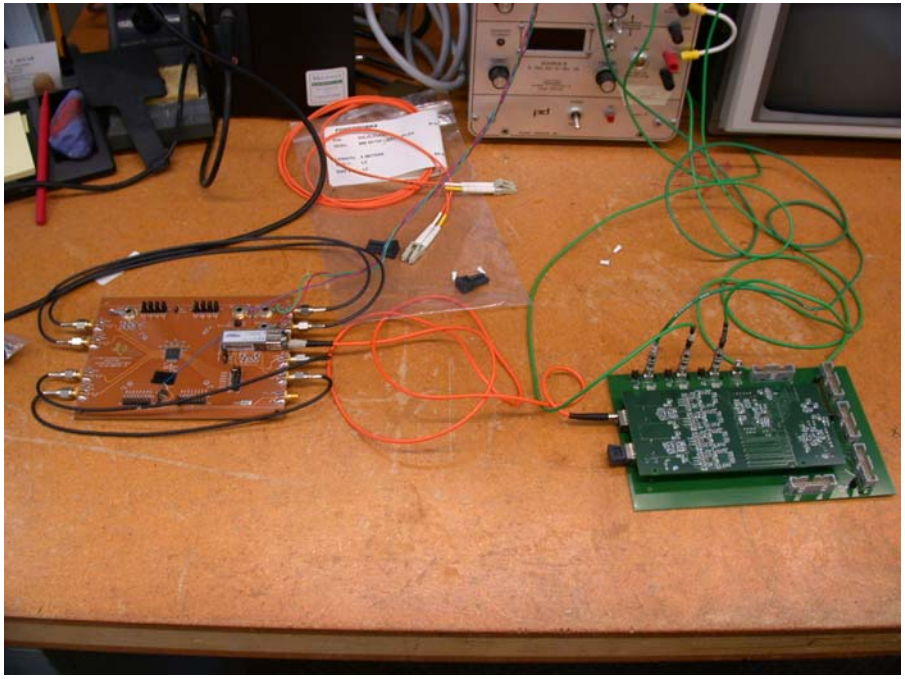




Electrical data



Stereo XFT
RX Mezzanine Test Setup



Error rate observations:

two 3 day running periods

zero errors observed during one three day period

3 errors observed during another three day period

Bit Error Rate = 3 errors / (20bits/16E-9s)*6days*24hr/day*60min/hr*60s/min)

= 5E-15

Stereo XFT PCB Status

XFT Upgrade

PCB Manufacture/Assembly Job released to Compunetix, Inc. on December 6, 2004

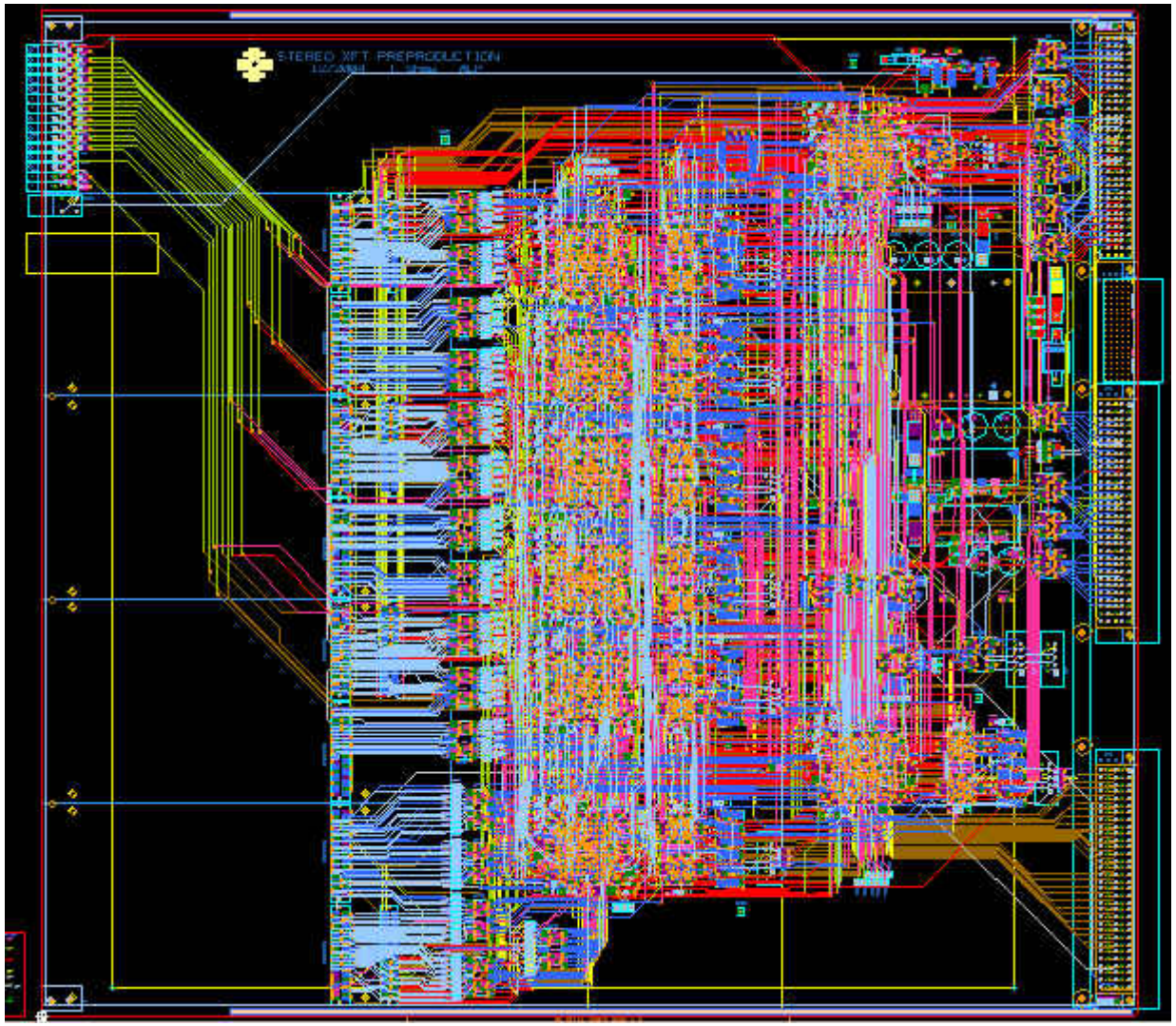
- 5 boards due back in 6 weeks ->Jan. 21, 2005
- 16 layer Board (8 signal/8 planes) – 9Ux400mm format
- All parts are in hand and will be shipped to vendor by the end of the week

Board Testing

Boards will be individually tested

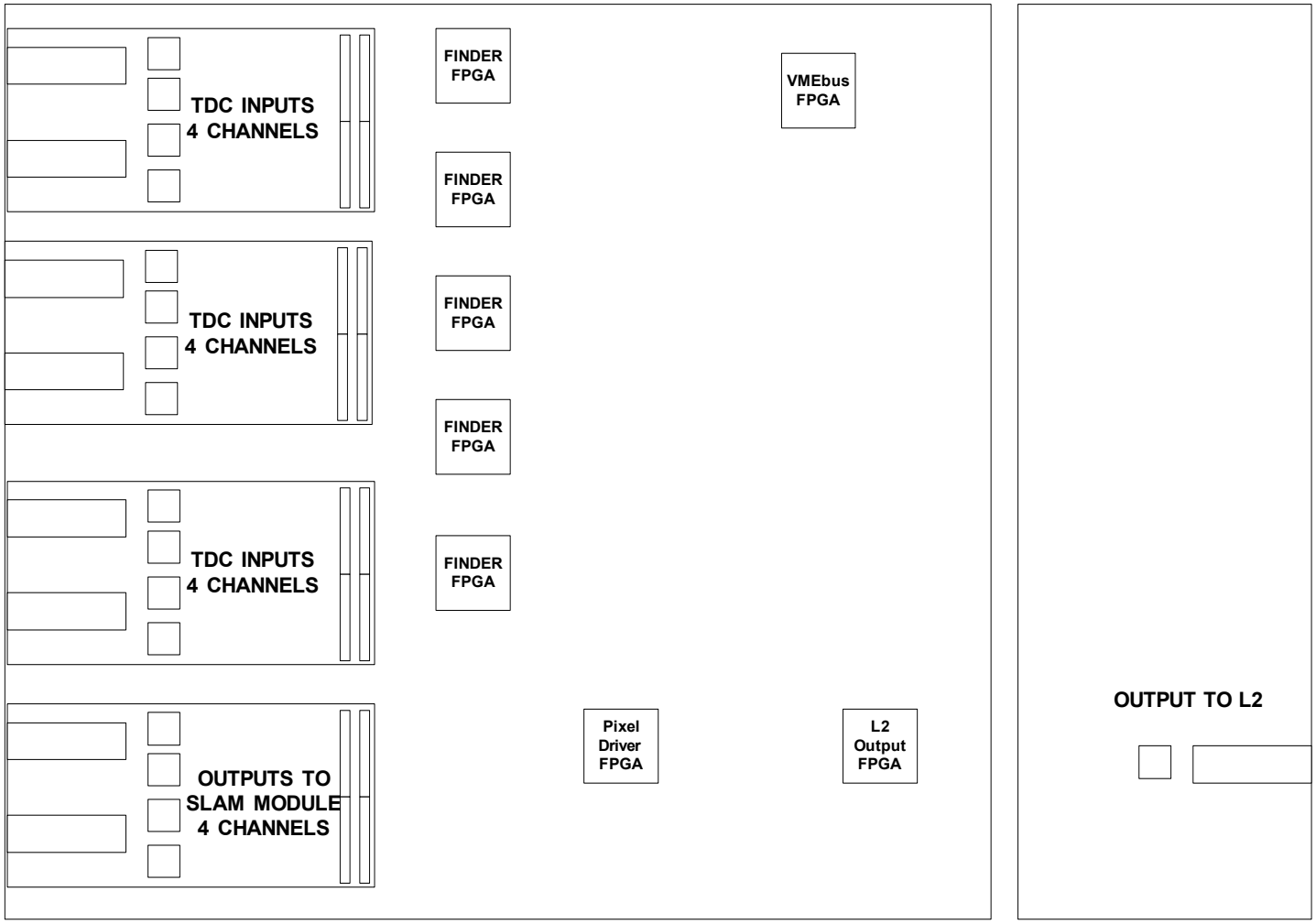
- **Initial**
  - JTAG to check connectivity
  - VME slave responses
  - FPGA download
- **Algorithm Tests**
  - load data in FPGAs, pump through and inspect results

XFT Stereo Layout



Transition Module – Link to L2

XFT Upgrade



Transition Module

Custom design for Transition Module has been schematically captured

- 2 serial optical links provided off the transition module
- each stream will contain identical information
- 8b/10b encoding utilizing TLK1501 serializer
- data stream to be received by the 4 Channel RX_Mezz which is also used on the Stereo XFT main board

Slam Driver Issue

Current plan calls for using the 4 channel TX_Mezz to drive signals to the SLAM

This presents a problem – the SLAM configuration requires 6 optical channels of data (3 copies each of two independent data streams)

Two possible solutions:

- **Use a 1:2 passive optical splitter cable**
  - These are ordered and will be tested ASAP
- **Build a 6 channel mezzanine module**

Schedule

Stereo Finder Schedule (set in June'04)

Finish Schematics	early Sept'04
Finish Layouts	early Oct'04
Preproduction Board under test	early Dec'04

we expect to begin above in late January'05

Testing complete	early Mar'05
Production Readiness Review	3/21/05
Production checkout done	late July'05